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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •

May 23, 1936

Queen of the Seas

See Page 329

A SCIENCE SERVICE PUBLICATION

SCIENCE NEWS LETTER

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The Weekly Summary of

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Edited by WATSON DAVIS

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DO YOU KNOW?

Cancer is more common in women than in men.

A bird that "moos" like a cow is the rare Derby's Guan, found in Central America.

Lambs of the mountain sheep follow their mothers easily almost from the hour of birth.

As a quick test for distinguishing crystal from glass beads an expert presses a bead to the lips—crystal feels colder than glass.

Avenues of trees in straight rows, even miles long, across forest or countryside, were popular in the seventeenth century in Europe.

Tire experiments are being made to find out whether rayon, used in place of cotton, will withstand heat and speed more effectively.

Only adult male lions have manes resembling beards, says a zoo director, and oddly enough captive lions have the finest manes, probably because the wear and tear of jungle life is hard on this adornment.

Japan maintains 45 research institutes employing 3,500 men, and Russia has 840 such institutes with almost 48,000 men.

Snowfall in the west in the past winter has been ample to insure water supplies for all Federal reclamation projects this season.

Among the pests that are effectively caught by light traps are codling moths, June beetles, gnats, mosquitoes, and grape leafhoppers.

A marble company has been developing a translucent marble suitable for luminous walls, screens, and interior lighting installations.

To make illumination of gardens more artistic, a lighting designer has devised little houses resembling bird houses for the lighting equipment.

Alice, the New York Zoo's 42-year-old elephant, broke out of her house and yard one cold morning this winter and robbed the bread basket at the Cook House, following an exact route she had been accustomed to take when a youngster 25 years ago.

WITH THE SCIENCES THIS WEEK

Most articles are based on communications to Science Service or papers before meetings, but where published sources are used they are referred to in the article.

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MEDICINE

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Can cancer of the lip be cured? p. 327.

Can patients be cured of regional ileitis? p. 333.

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What new treatment has been effective for meningitis? p. 328.

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SURGERY

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VOLCANOLOGY

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ZOOLOGY

Is there a humane trap for wild animals? p. 330.

What creature may be called a "living fossil"? p. 334.

What do bats like to eat? p. 331.

MEDICINE

Nearly 100 Per Cent Cure of Lip Cancer May be Possible

Medical Association Hears of New Treatment For Meningitis; Racial Resistance to Tuberculosis

NEARLY 100 per cent of cases of lip cancers could be cured if treatment were started in the early stages of the disease and the cancer were completely destroyed, Drs. Udo J. Wile and Eugene A. Hand, of the University of Michigan, told members of the American Medical Association at their meeting in Kansas City.

This optimistic figure for possibility of cure of lip cancer was based on study of 425 cases. In moderately advanced cases, from 70 to 80 per cent can be cured, but the outlook in advanced cases is hopeless.

Of the cases studied by the Michigan physicians, 410 were in men and 15 in women. Greater prevalence of smoking, especially pipe smoking, among men than women may account for this large difference. In many cases the cancer definitely appeared on the spot where the pipe had rested for many years. On the other hand, 15 per cent of the patients had never used tobacco in any form. About one-third had used it moderately or excessively.

The younger patients fared better than the older ones in recovering after treatment. This is interesting, Dr. Wile said, because it is generally believed that cancer in young persons is more malignant with less hope of cure than in older persons.

No Safe Childbirth Drug

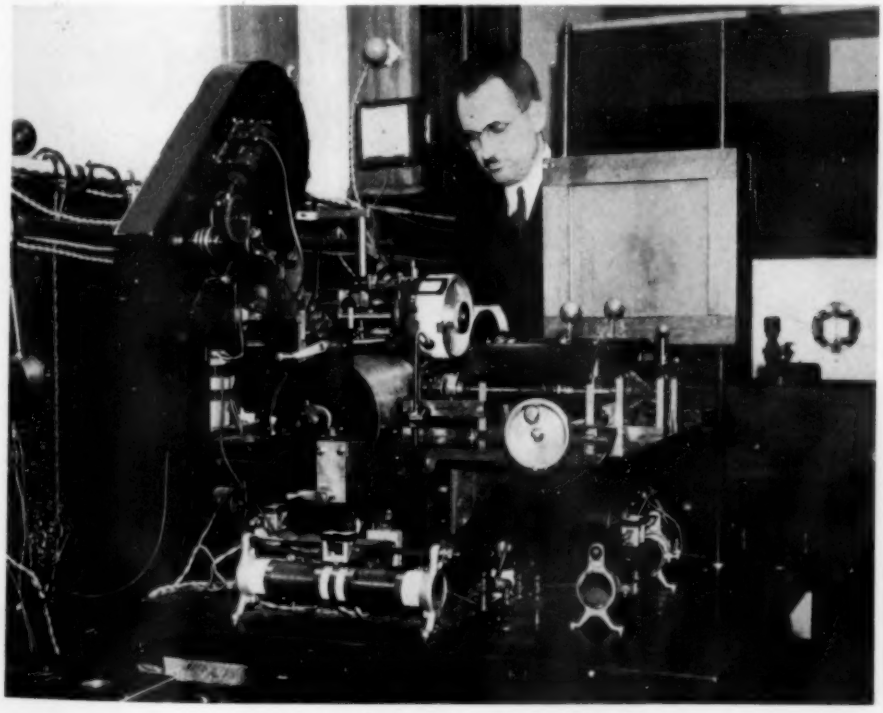
No childbirth anesthetic that is perfectly safe for both mother and child has yet been discovered, Dr. Gertrude Nielson of Oklahoma City declared at the same meeting.

The much discussed high maternal death rate in the United States is in large part a result of the great increase of the use of analgesics in childbirth, Dr. Nielson said in a vigorous protest against this practice.

"Childbearing is so essential an experience for a woman that the thwarting of its normal course by the excessive use of analgesics may cause great damage to her personality," Dr. Nielson asserted. "If she is carried through delivery in an unconscious state, she is deprived of the experience of giving birth to her child and in some cases will pay for this escape from reality by nervous disorders.

"In my observation no woman—whether intelligent or unintelligent, modern or old-fashioned—wants the birth of her baby to be a blank in her memory," Dr. Nielson concluded. "Certainly, none will wish to be relieved of pain at the risk of harm to her baby."

At the same session experience with three childbirth anesthetics was reported by various groups of physicians. Four thousand cases in which twilight sleep, a combination of two drugs, scopolamine and morphine, (*Turn to next page*)



"FINGERPRINTING" ELEMENTS

Dr. George R. Harrison, Massachusetts Institute of Technology professor, is shown here with a "robot scientist"—automatic wavelength measuring, computing and recording machine.

CHEMISTRY

Million "Fingerprints" Of Elements Measured

MORE than a million lines on photographs, each of which is a sort of "fingerprint" of a chemical element, are being measured with unequaled accuracy and speed by scientists and WPA workers at the Massachusetts Institute of Technology. Dr. George R. Harrison, M.I.T. professor, described for the National Academy of Sciences this gigantic systematic determination of wavelengths and intensities of the spectral lines of the chemical elements.

Several million measurements, accurate to one part in 5,000,000 or better, are being made.

A "robot scientist," which is a recently developed automatic wavelength measuring, computing and recording machine, makes the obtaining of data from 20 to 200 times faster.

Precise information on spectra is needed both for the development of chemical analysis by means of light given off by very hot substances and for studies to determine how the atoms of various chemical elements are built.

After the robot machine reads the wavelength and intensities from spectrograms and records them directly on motion picture film, a staff of 60 WPA workers tabulate, correlate and average the output of the machine.

was used, were reported by Drs. Otto S. Krebs, George L. Wulff and Helman S. Wassermann of St. Louis. Pentobarbital-sodium with scopolamine was found a highly effective and simple childbirth anesthetic in 1,800 cases reported by Drs. Charles E. Galloway, Robert M. Grier and Robert Blessing of the Evanston, Ill., Hospital. Successful use of paraldehyde with benzyl alcohol in 600 cases was reported by Drs. Howard F. Kane and George B. Roth, the George Washington University research team who recently announced this method of relieving pain in childbirth. (See SNL, Mar. 7.)

New Meningitis Treatment

A new method of treating meningitis, highly fatal disease of brain and spinal cord which has been increasing alarmingly in recent years, was reported by Dr. Archibald L. Hoyne of Chicago.

In a group of patients treated by the new method, the death rate was only 11.8 per cent, Dr. Hoyne reported. Death rates of more than 40 per cent have been reported for this disease in Chicago every year except one between 1916 and 1933. In certain other cities the death rate has been even higher.

The successful method Dr. Hoyne has used to treat this disease is to inject antimeningococcus serum, or the newer meningococcus antitoxin, into the veins instead of into the spine as was previously done. Dr. Hoyne bases this method of treatment on a new theory he has developed. Meningitis, as he sees it, is a special complication of a general disease of the central nervous system. The meningococcus antitoxin is more effective than the serum, it appears from Dr. Hoyne's report. He gave the serum and the antitoxin to alternate patients and found the fatality rate in those treated with antitoxin less than half that in the serum-treated patients.

The age of the meningitis patients influenced the outcome of the disease, Dr. Hoyne noticed. Patients under 20 years of age had a much better chance for recovery. Heart disease, alcoholism and tumors of the abdomen were factors, besides age itself that handicapped the older patients in their fight for recovery.

Racial Resistance To TB

Decline in tuberculosis cases and deaths during the past decades may be at least partly due to the fact that the human race has built up increasing resistance to this disease. This possibility was discussed by Dr. James Alexander Miller of New York.

Isolation of patients with active tuberculosis and improvement in economic and social status have also played their part in bringing about the tb decline, Dr. Miller pointed out. But just as persons build up resistance, so can the race, in his opinion. Resistance depends on four factors: resistance acquired through repeated mild exposures; inherited resistance, which is open to question; accumulated resistance, the sum of the first two factors; and constitutional fitness.

Disease May Disappear

Rheumatic heart disease, serious ailment of young persons, sometimes disappears of itself, Drs. Paul D. White, T. Duckett Jones and Edward F. Bland of Boston reported. They examined about 1,500 patients during the acute stage of this disease and, reexamining them ten years later, found that about sixty of the patients had perfectly normal hearts.

Blind From Reducing Drug

More than fifty young and middle-aged women who took the new and dangerous reducing medicine, dinitrophenol, developed cataract of the eye, Dr. Warren D. Horner of San Francisco reported. The cataracts developed exactly as they do in elderly people. Within a few weeks all the victims can see is the movements of their hands. No treatment has been found to retard the growth of the cataracts, but extraction of the cataracts gives results comparable with this method of treating other kinds of cataracts.

Don't Force Child to Eat

The common maternal mistake of forcing a child to eat was attacked vigorously by Dr. Clifford Sweet of Oakland, Calif.

Malnutrition has been overemphasized until it has become a menace to the peace of mind of mothers, Dr. Sweet declared. The battle waged at many a meal provides an atmosphere for the development of any and every sort of behavior problem.

One method used by Dr. Sweet to study the problem is to have parents let the child direct his own eating for three weeks while the parents keep a record of what and how he eats. The mother often finds that her child is eating more than she thought. Sometimes Dr. Sweet had trouble getting the last week's record because the problem had disappeared and the mother lost interest in keeping the record.

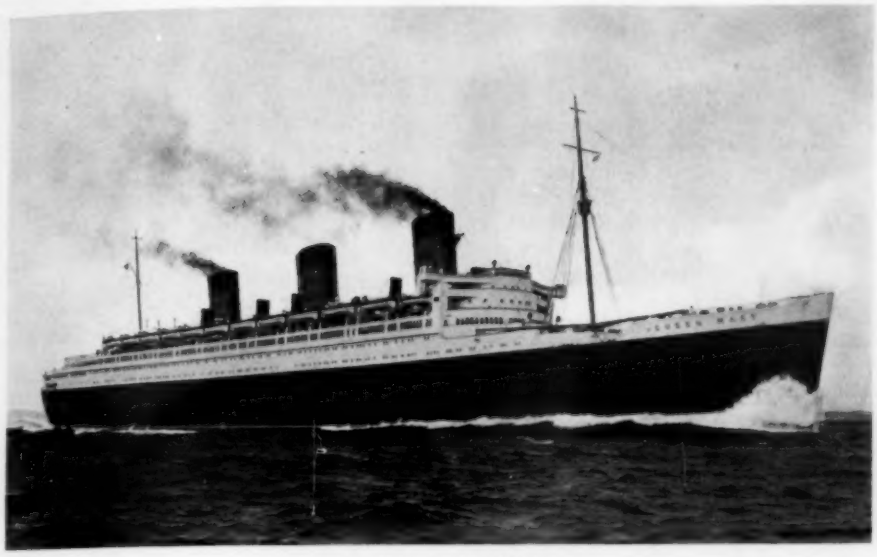
Definite faults in eating can usually be corrected by proper methods, Dr. Sweet indicated. The child who does not like meat usually has not learned to chew it sufficiently to swallow it. Taking away foods the child says he does not like sometimes has a magic effect; he may soon ask for them.

"I am certain," Dr. Sweet concluded, "that no normal healthy child can long resist the demands of his body for food when there is added to it the example of the other members of the family eating the food that appears on the table or omitting it without remark, in an atmosphere of comradeship and enjoyment." (*Turn to page* 336)

Diet Principles For Mothers

Seven dietary principles for the guidance of mothers were presented by Dr. Clifford Sweet of Oakland, Calif., at the Kansas City meeting of the American Medical Association, as follows:

- **1. One vegetable is as good as another and one meal or even days without a morsel of vegetable is not altogether lost.**
- **2. Meat is a valuable food; while broth has no value except as a vehicle for other foods and cheese adds nothing to the diet except milk.**
- **3. Cereals in the forms of hot mushes gain no values not present in bread, crackers or dry cereal, if only they are sufficiently "whole grain" to retain their vitamin B content.**
- **4. Every child does not need a quart of milk daily and he should receive credit for milk cooked in food.**
- **5. A diet high in fat decreases appetite, prevents digestion and absorption and therefore growth; therefore cream should not be given too freely.**
- **6. Temporary loss of appetite may mean only that the child is not hungry, while a prolonged absence from food is usually the first symptom of illness.**
- **7. The father's duty is to earn the money to buy food and the mother's to put it on the table in sufficient variety.**



THE QUEEN MARY

CHEMISTRY-AGRICULTURE

Death Knell of Cotton Pickers Suggested at Conference

ROMANTIC pictures of singing cotton pickers down in Dixie, already threatened by the development of a machine to do the picking, are in danger from another quarter, it developed at the meeting of the second Dearborn Conference of Agriculture, Industry and Science, held this year in Detroit.

Dr. Frank K. Cameron of the University of North Carolina put forth a proposal to grow the cotton thick in the field, forcing the largest possible number of bolls to maturity at the same time, and then cut and dry the whole business, as prosaically as so much hay.

These whole dried cotton plants are to be ground down to a powder and then put through a double chemical treatment. The first step will extract the oil, the second will digest both the cotton and the cellulose of the stalks into alpha cellulose, basic material in the manufacture of rayon and other modern products of chemical industry.

Only Possible Salvation

Dr. Cameron has been carrying on fairly large scale experiments for several years, and is anxious to see his method tested out in other cotton growing sections. He is convinced that for his own part of the South, where cotton was first grown in this country, it is the only agricultural and economic salvation.

The land there is too hilly for the use of tractors, cotton picking machines and other types of "cotton field artillery" that have come into action on the flatter terrain of the western Gulf states. So the mowing machine and the chemical kettle bid fair to exile the singing cotton field "hands" and the cotton gin to the only territory where they have been really profitable for the past few years —upper Broadway.

When a Plant Bites, That's News

The cowboy's boast in the old song, that "rattlesnakes came out and bit me—and then crawled away and died!" is made good by plants when treated with certain substances that makes their sap poisonous to sucking insects, though the substances themselves may not have any poisonous effect if applied directly to the pests.

This curious phenomenon of plant immunity to insect bites was discussed by Prof. Dwight M. Delong, of Ohio State University.

The insects belong to the group known as leafhoppers. They afflict the plant by sticking their sharp little beaks into the leaf-veins and sucking the sap, much as mosquitoes afflict mankind. Usually they can be killed only by what are known as "contact insecticides," which immediately wipe out the insects they touch, but have no effect on later comers. (*Turn to next page*)

MARINE ENGINEERING

Seaworthiness of New Ship Insured by Sound Planning

By BENJAMIN WISTAR MORRIS

(EDITOR'S NOTE: Mr. Morris, a leading architect of New York City, served as joint counsel and designer on the planning and decoration of salons of the *Queen Mary*, and as personal adviser to Sir Percy Bates, chairman of the Cunard White Star Board.)

See Front Cover

SHIPS designed to cross the North Atlantic in winter as well as summer must stand such enormous stresses as are engendered by high seas. Into the Cunard White Star liner *Queen Mary*, destined for year-round service, experienced builders instilled seaworthiness by means of sound planning.

Structure as required by the British Board of Trade was the first consideration and no concessions were asked for by designers of the ship's interior. Beauty within the ship consists of arranged construction, embellished with an economic, sparing, and studied use of ornament. For good and practical reason, the *Queen Mary* does without the glories of unbroken vistas extending the length of the upper deck.

Her three direct uptake funnels arranged along the center line of the ship continue directly upward to their outlets, instead of being deflected up the sides and over the promenade deck as is the case with a number of vessels of Continental design. In addition two large engine hatchways are installed further aft along the center line. Taken together, the funnels and hatchways comprise five unbroken elements of structural steel rigidity extending through the entire height of the ship, into which extra heavy deck plates and girders were tightly woven, the whole bracing the horizontal structure at every level.

Extra thick plating was provided for the ship's double hull, which extends as far up as the waterline, and for her sides and decks, while ribs are more closely spaced than heretofore. The great strength built into the hull is borne out by the vessel's weight, her 77,500 tons displacement exceeding that of any other ship by about 10,000 tons. And the *Queen Mary* has a longer waterline length—1,004 feet—than that of any other ship, yet she is several feet shorter than the longest overall. This can only mean that the *Queen Mary* has the greatest foundation or supporting size with relatively less superstructure to carry. Other things being equal, it is the primary factor of waterline length that determines added steadiness and speed.

From Page 329

However, it has been found that certain copper compounds, and more especially certain forms of sulphur, will cause changes in the plant's sap, making it poisonous to the leafhoppers for many days. Most of the compounds are not directly poisonous to the insects themselves. Moreover, they are not soluble in water, and it seems improbable therefore that any great amount of them gets into the plant juices. How they cause the plant to become poisonous to the insects has not as yet been found out, but the fact remains that they do have this effect.

Pyrethrum, a plant that is always poisonous to insects, if it is used aright, may become a profitable crop in the United States, making part or all of the present imports from Japan and Jugoslavia unnecessary, R. E. Culbertson, research fellow of the Crop Protection Institute, told the meeting.

Pyrethrum belongs to the chrysanthemum family, and looks like a tall white daisy. The active principle extracted from its dried flower heads, called pyrethrin, is what puts the lethal "kick" in many widely used household insect-killers. Over thirteen million pounds of dried pyrethrum is now imported annually.

Mr. Culbertson has had test plantings made in thirty states, under a wide variety of climatic and soil conditions. Results indicate that the plants will grow well in all parts of this country, and that the paying pyrethrin content is just as high in the domestic product as in the imported. Weather affects the quality of the crop: there is a higher concentration of pyrethrin in hot, dry seasons than in wet, cool ones.

Riding in Corn

When you buy a shiny new automobile for the family, a pair of patent-leather sandals for your wife, or a brightly-lacquered toy for one of the kids, you may be consuming corn and cotton in disguise. Charles L. Gabriel, New York industrial chemist, explained how.

Corn and other grains were used in large-scale production of only one chemical, ethyl alcohol, pre-war days. Now they are fermented into many other useful things.

Prominent among these uses is butanol or butyl alcohol, used as a solvent for cotton in the preparation of bright modern lacquers and leather finishes. Another is methanol or wood alcohol, which can be converted into formaldehyde, widely used as a disinfectant, in the manufacture of dyestuffs, and in the production of synthetic resins of the Bakelite type.

Power alcohol, for blending with motor fuel, was stoutly advocated by Francis P. Garvan, President of the Chemical Foundation, New York. He held that the addition of alcohol to gasoline is justified from both engineering and economic viewpoints, and that it is absolutely necessary as a matter of national defense.

Mr. Garvan directly accused the Standard Oil Company of New Jersey of devious methods in opposition to the power alcohol program. Furthermore, he added, the same company is "plotting and planning with the German I.G." to monopolize world production of liquid fuel from coal by the Haber process, when supplies of crude oil run low.

He warned industrialists among his hearers that if private business does not take up the manufacture of power alcohol the Government will. Although deprecating Government competition in business, he added, "Do not blame the Government for going into business. When it does so, it is always due to either the sloth or the greed of private interests."

Science News Letter, May 23, 1936

ZOOLOGY

Chain Replaces Steel Jaws In Humane Animal Trap

Invented by Leading Animal Researcher, Dogs and Even Hunters Can be Caught Accidentally Without Danger

By DR. FRANK THONE

TRAPPING animals for fur, for domestication, or to remove them as nuisances, promises to become a much changed and far more humane business than it has been during the long reign of the steel trap, through the introduction of an entirely new type of trap, the invention of Vernon Bailey, veteran zoologist of the U. S. Biological Survey. Mr. Bailey's trap substitutes for the old-time steel jaws a firm-holding but painless chain loop, somewhat reminiscent of the string snares we used as boys, to catch ground-squirrels and gophers. Only it is much stronger, wholly automatic in action, and can be built big enough to capture a grizzly bear.

Mr. Bailey has spent a long lifetime among animals, as their student and their friend. He has hated to see them tortured by steel traps—and often escaping from them, at the cost of being crippled for the rest of their lives. Yet he recognizes the legitimacy of the fur trapping industry, which has for a long time depended largely on steel traps. To produce a better trap, that would never lose its catch and yet never torture or maim the animal, has been his ambition for many years.

The "Verbail" trap—as his friends have named his invention—is built very much like a bow. There is a strong but flexible spring-wire arch, with a piece of light chain attached to each end. The free end of each chain terminates in a ring, which slides freely around the opposite chain, thus forming an easily closing loop.

When the trap is set, a four-legged "spider" of light metal holds the loop open, wide enough to admit the foot of the animal to be caught. When the animal steps into the loop, the jointed legs of the "spider" let go and the spring flies apart, throwing the loop upward and at the same time pulling it shut—and the animal is caught.

The first reaction of a trapped animal always is to jump and pull. In an anchored steel trap, this always ends in a violent jerk, increasing the shock and pain of the jaws' first hard snap, and not unlikely breaking the animal's leg—if the steel trap has not already broken it.

In the "Verbail" trap, the effect is quite different. The chain cannot break the animal's leg, and its jump and tug are stopped by the "yielding resistance" of the spring that holds the chain. As a rule the animal, not being in any pain, soon accepts the situation philosophically and lies down to wait for what may happen next.

Animals with their legs broken in steel traps of the present pattern not infrequently pull and twist, despite the agony their efforts cause, until the foot is pulled off, and they escape. Once in a while a desperate wolf in a trap will even gnaw the broken leg free. But in

Mr. Bailey's chain trap such self-amputation is impossible. It is thus not only more humane than the steel trap, but considerably surer to hold its catch.

Another advantage which Mr. Bailey points out for his non-mutilating trap is the avoidance of neighborhood feuds due to the unintended capturing of dogs, cats, sheep and calves. A steel trap, even if it does not break a leg, is certain to cause at least severe bruising and laceration, which will not only cripple the animal but irritate the owner. But a chain trap causes no more inconvenience than making stray Towser stay away from home a little longer than he intended.

Mr. Bailey tells of a nice old shepherd dog that blundered into a chain trap he had set for a fox. When released, Shep followed his captor with waving tail and every apparent intention to "adopt" him, and it was only with difficulty that Mr. Bailey persuaded him to go home.

Bear traps of the present steel-jawed type, frequently armed with inward-pointing spikes, have terrible effects on unwary hunters or hikers who accidentally step into them. They always cause serious injury and intense suffering, and since it is impossible to open them without a special tool, men have been known to die of pain, starvation and thirst when caught in bear traps. A chain bear trap, on the other hand, causes no injury to even the most delicate ankle, and any human being can open it and escape in a few seconds.

Catches Himself

So little harm is there in the chain traps that Mr. Bailey's favorite method of demonstrating their action is to stick his hand into the loop and let it spring shut on his wrist or finger. He declines, however, to make a parallel demonstration with a steel trap.

A final advantage pointed out for the chain trap is its lightness, which will enable a trapper operating a long line of traps to carry a larger number—with, of course, correspondingly larger chances of making a profitable catch.

Mr. Bailey has also invented several other non-killing, non-maiming traps, including one which closes up around a beaver, holding him helpless but unharmed until his captor comes to take him away for "re-planting" in some old beaver stream, trapped out many years ago. Mr. Bailey has captured many beaver in this way. He says they are among the easiest of animals to make friends with and can be "gentled" in a few minutes.

PAINLESS TRAP

The inventor himself, Vernon Bailey, veteran zoologist, does not mind being caught in his new and humane animal trap, made with a flexible chain loop. The light chain clings around his wrist, snugly yet harmlessly. You wouldn't do that with a steel trap.

Mr. Bailey does not limit himself to beaver, however. He will undertake to put any animal he traps into a bag and take it home alive, if it is of a size he can lift. He has done this with many wildcats, coyotes, foxes, and other animals captured in his chain traps—though he admits that with bobcats it was "rather like going through a barbed-wire entanglement." Although Mr. Bailey is now an elderly man, and not a contender in the heavyweight division, he is quick and wiry from a long outdoor life. Moreover, he "just knows his bobcats."

Another animal guest which Mr. Bailey has transferred from trap to bag, and taken home safely on his back, was in a sense more formidable than any bobcat—though it was of a species armed less for hand-to-hand combat than for chemical warfare methods. Yet by using plenty of diplomacy—and time—Mr. Bailey got Puss-in-Stripes into his bag, took him home, and kept him there for two days before turning him loose again. And all without the least interruption in amicable relations.

You can do anything with animals if you only use tact and a little animal sense, says Mr. Bailey.

Science News Letter, May 23, 1936

ZOOLOGY

Bats, Captive, Like Diet Of Cheese and Minced Bees

BATS, which would hardly be fancied as pets by most people, have been kept as more or less docile captives for months on end by Prof. William H. Gates of Louisiana State University. At the meeting of the American Society of Mammalogists in Philadelphia, Prof. Gates told of his experience in capturing and keeping bats of several species, and of his observations on their feeding and breeding habits.

Captive bats, he found, would feed willingly on a large number of things that they cannot imaginably get in their native state. American cheese, cottage cheese, yeast, bees killed and cut into small pieces, minced insects of other kinds, bread, crackers, hard-boiled eggs, any kind of vegetable, any kind of unsalted meat, milk of all kinds—sweet, sour, evaporated, buttermilk, malted milk—all these the bats fed and thrived on.

They preferred cottage cheese above other artificial foods, Prof. Gates said, and would even (*Turn to page* 334)

MEDICINE

"Ginger Jake" Victims of 1930 Still Disabled

WHAT ever happened to the much-discussed "ginger jake" victims of 1930 and 1931? Remember how the paralytic illness due to drinking adulterated Jamaica ginger in the days before repeal was a front-page story?

At the time, physicians hoped and believed the shocking effects would be only temporary but at the meeting of the American Psychiatric Association it developed that the disability is permanent.

Dr. William M. Bevis of the Veterans' Administration Facility at Mountain View, Tenn., told his colleagues that the former "ginger jakers" are now unable to get about enough to earn a living.

Dr. Bevis described sixty-seven cases of patients he has examined in the past three years who are still disabled. In the majority there has been very slight if any improvement since they first were paralyzed by the adulterated drink. Marked weakness of the legs and back, waddling gait, wasting of hands and legs, ape-like looking hands, hardened muscles and shortened muscles and tendons are the present results of the condition. Dr. Bevis showed motion pictures of some of the men to illustrate their condition.

Science News Letter, May 23, 1936

VOLCANOLOGY

Steam at Mt. Lassen, Only "Live" Volcano in U. S.

AN ERUPTION of continental U.S.'s only live volcano, Mt. Lassen, in California, would not be surprising following earthquakes and 200-foot high steam jets reported by Superintendent E. P. Leavitt, to U. S. National Park Service headquarters.

Lassen first erupted, within historic days, in 1914 and activity continued until 1918. In the 18 years since there have been steam outpourings and fumaroles in the area around the peak, but the happenings in the past weeks have been more important. They may be warning of what is happening beneath the ground.

First, a steam jet 200 feet from the crater was reported and four vents issuing vapor were found. Then followed earthquakes recorded on the seismograph at Manzanita Lake. First shocks came on Wednesday, May 6; a total of 23 with nine stronger than the rest. One at 6:30 a.m. Friday lasted 1 minute 37 seconds. It is known that local earthquakes have often preceded volcanic eruptions.

Mount Lassen continued to show signs of activity during the first ten days after the new steam jets began to spurt from its slopes. Up to May 14, 124 distinct earth tremors had been felt, and had recorded themselves on the seismographs maintained at headquarters in Mount Lassen National Park.

The 1914 eruption of Lassen, epoch-making because it was the first volcanic eruption within the borders of the U. S. proper known to have taken place in historic times, was on Memorial Day. It was an explosion of ash-laden steam within the summit crater. Almost a year later, in late May, 1915, there were two terrific eruptions, with a mud flow on the northeast slope of the mountain which devastated the valleys of Hat Creek and Lost Creek for twenty miles.

Before 1914 Lassen was just another old volcano cone. Then it became one of America's wonders under control of the National Park Service. It was surrounded by a national park and good roads carried thousands to its area. It has scientists and instruments to watch its least unrest.

If after 20 years it now becomes active, Lassen will again make the front pages of newspapers. And visitors to California will be able to motor to a live volcano in comparative safety.

Uncle Sam is fairly rich in volcanoes, active and extinct, but the live ones, except Lassen, are in his territories.

Science News Letter, May 23, 1936

CHEMISTRY

Chemistry Honor Awarded To Inventor of Bakelite

FIRST award of the Pioneer Cup of the Chemical Foundation and the Chemurgic Council, a new honor in American chemistry designed for the recognition of research and discovery in this country, was conferred upon Dr. Leo Baekeland, noted Belgian-American chemist who invented Bakelite, at the Second Dearborn Conference of Agriculture, Industry and Science. In Dr. Baekeland's absence, it was accepted on his behalf by Dr. C. H. Herty.

The cup is a replica of one made in Massachusetts before 1700, by Edward Winslow, an early American-born silversmith, who is rated as the artistic peer of Benvenuto Cellini.

Science News Letter, May 23, 1936

IN SCIE

VITAL STATISTICS

Death Rate For 1936 Increased Over Last Year's

THE DEATH rate is higher for 1936 in all but 17 of 130 major cities of the nation than it was in 1935, figures released by Bureau of Census of the U. S. Department of Commerce reveal. The comparison period is the first 18 weeks of each year.

Deaths from motor vehicle accidents are appreciably less for the 18-week period than they were last year, however. The figures for 1935 are 2,949 deaths in vehicle accidents while for the same period in 1936 only 2,503 motor vehicle deaths have occurred.

Science News Letter, May 23, 1936

RADIO

High-Frequency Waves Bounce Off Skyscraper

RADIO waves of the kind to be used in television have been flying over New York City in recent months between two of the metropolis' greatest skyscrapers, the Empire State Building and the RCA Building.

These waves, completely out of all range of ordinary broadcast receivers, have a frequency of 177,000,000 cycles a second. They are in the range used for experimental television broadcasts, declared P. S. Carter and G. S. Wickizer of R.C.A. Communications, Inc., before the joint meeting of the Institute of Radio Engineers and the International Scientific Radio Union in Washington, D. C.

The high-frequency signals received, said the radio scientists, came by several paths besides the direct one between the two skyscrapers. Some of the signals arrived after reflection off the ground and after reflections from other nearby buildings. This reflection characteristic of the high-frequency waves is typical, for it is known that they can be propagated in straight lines; have difficulty in bending around intervening obstacles; in fact, have a transmission distance limited quite largely by the curvature of the earth.

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EE FIELDS

MEDICINE

Many Lives Saved by Identifying New Disease

MANY LIVES have been saved since the identification of a new disease called terminal or regional ileitis, it appears from a report of Dr. O. J. Hagen, Regent of the University of Minnesota, to the Minnesota State Medical Association meeting.

The disease involves a part of the digestive tract called the ileum and before its identification was undoubtedly diagnosed as cancer, tuberculosis, ulcerative colitis or appendicitis, because it closely resembles these in symptoms.

In practically all cases of terminal ileitis, the patient recovers if the disease is discovered and treated early. Before it was known as a separate disease, however, it is likely that many patients died who could have been saved by proper treatment, which is surgical operation. X-rays make it possible to tell this from other intestinal diseases. The cause is probably invasion by some unidentified germ.

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MEDICINE

Refute Idea That Allergic Diseases Are Hereditary

THE prevailing idea that the allergic diseases such as hay fever, asthma, hives and eczema are inherited was refuted by Dr. Bret Ratner, clinical professor of children's diseases, New York University College of Medicine, at the meeting of the Association for the Study of Allergy.

Susceptibility to these diseases is not transmitted through the germ plasm, or the genes which are the carriers of hereditary traits, Dr. Ratner concluded from investigations covering a period of fifteen years. The allergic diseases are acquired by the individual under certain circumstances from the inhalation of pollens, animal or vegetable dusts, or contact with them, or from the ingestion of foods.

Dr. Ratner studied 250 allergic children and 315 normal children and their respective families. Allergy was found about as often in the families of allergic children as in the families of the normal children. Only rarely, Dr. Ratner found, is there a so-called allergic family in which a large proportion of the members suffer from hay fever, asthma, hives or other allergic disorders.

The development of allergy is to a large extent a matter of chance. It depends on the amount of protein to which a person is exposed, the state of permeability of the mucous membranes of nose, breathing and digestive tracts which ordinarily act as a barrier, the ability of the body to rid itself of invading protein substances, and the intervals at which such exposures occur.

This idea of how allergy develops is borne out by research in which Dr. Ratner and his co-workers actually produced asthma in the guinea pig. They also showed that a child may become sensitized during the period before birth.

The hope held out by the studies, Dr. Ratner indicated, is that since susceptibility to hay fever and other allergies is not inherited through the germ plasm, proper preventive measures can be instituted to control and to a large extent eradicate this common ailment, which is present in every tenth person.

Science News Letter, May 23, 1936

AVIATION

Aviation Medal To N.A.C.A. Director

DR. GEORGE WILLIAM LEWIS, director of aeronautical research of the National Advisory Committee for Aeronautics, has been awarded the 1936 Daniel Guggenheim Medal, one of aviation's highest awards. This is the eighth year of award, with Wright, Prandtl, Lanchester, de la Cierva, Hunsaker, Boeing and Durand as previous medalists.

Dr. Lewis has steered N.A.C.A. research since 1919. This government agency has one of the best equipped aeronautical research laboratories in the world at Langley Field, Va.

Among the outstanding contributions to aeronautics made by the Committee under Dr. Lewis's leadership are: The N.A.C.A. cowling; the N.A.C.A. engine-nacelle location; important data on the air loads on aircraft in flight, forming the basis of strength requirements for aircraft design; determination of means of reducing landing speeds; determination of improved methods for the lateral control of airplanes, especially at high angles of attack; and the development of airfoils of improved characteristics.

Science News Letter, May 23, 1936

GENERAL SCIENCE

British Scholars to Study At American Universities

THIRTY-ONE scientists and scholars of the British Empire will study in American universities in the next two years, it is announced by the Commonwealth Fund.

These men are the eleventh annual contingent of Commonwealth Fund fellows who have just been selected by a British Committee of Award whose chairman is Sir Walter H. Moberly.

Among the fellows is a New Zealand meteorologist who will take postgraduate studies in weather forecasting for aviation at the Massachusetts Institute of Technology. Harvard University will have a college principal from Ceylon studying technical education. And a veterinary scientist from South Africa will study the insect carriers of animal disease at the University of Minnesota.

Science News Letter, May 23, 1936

MEDICINE

Lack of Sex Hormone May Cause Nervous Exhaustion

RELIEF of nervous exhaustion in women by sex hormone treatment and a kidney extract that benefited patients suffering from nephritis were reported at the meeting of the Association for the Study of Internal Secretions.

Nearly half of a group of 250 women who suffered from chronic nervous exhaustion were relieved of most of their symptoms and another 24 per cent were improved by treatment with a female sex hormone preparation, Dr. L. F. Hawkinson of Brainerd, Minn., reported. The symptoms of nervous exhaustion in these women included nervousness, lassitude, exhaustion after exertion, irritability, depression and crying spells. Many cases, Dr. Hawkinson believes, are the result of deficiency of the ovarian hormone, estrin.

Treatment of nephritis by kidney extract was reported by Dr. Benjamin Jablons of New York City. The substance he used was extracted from kidneys immediately after their removal from the body and seems to be a kidney hormone. Lack of this hormone in nephritis is responsible for some of the symptoms of this type of kidney disease, in Dr. Jablons' opinion. When he gives this extract to nephritis patients, their blood pressure drops, convulsions are relieved, shortness of breath is improved, and other symptoms clear up.

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drop other foods they had already picked up, if they found it available. Their preference for bees rather than other insects might appear strange at first, for bats fly at night and bees by day, so that they do not normally meet. However, Prof. Gates suggested, the nectar carried by the bees may have given them an attractively sweetish taste.

All the food had to be chopped up very fine, for bats are rather helpless, with both arms and legs involved in their wide "leathern" wings, and their mouths are adapted only to the intake of very tiny morsels. Their meals must be served in very shallow dishes, as must also the necessary supply of drinking water.

30 Million Years Late

Okapi, queer-looking jungle cousin of the giraffe and one of the world's rarest mammals, is a "living fossil," 30 million years out of step with the times.

This is the verdict rendered by Edwin H. Colbert, research worker at the American Museum of Natural History. Mr. Colbert has made a careful examination of okapi skeletal material, and finds that though the animal is related to the modern giraffe, it is in all respects more primitive than any fossil giraffe known. He considers it to be more like what an ancestor-giraffe might have been, back in Miocene times, 30 million years ago.

Although not an extinct animal, the okapi is apparently about as near extinction as a species can get, and still survive. It was never seen by white men until the beginning of the present century, when its discovery by Sir Harry Johnston, then governor of the British province of Uganda in Africa, caused a furor in the scientific world and even a newspaper sensation. It lives in the dense tropical jungle, where its extreme shyness and skill at concealing itself make its detection exceedingly difficult. Not so tall or long-necked as the giraffe, it still shows its zoological kinship in its high shoulders, peculiarly shaped head, and little nubbins of horns.

Looks Like a Bear, But Isn't

Panda, one of the strangest-looking animals that wears fur, has been put in the same family pew with raccoons, though to outward appearance it is more like a bear. The newest effort toward a correct classification of this puzzling beast was reported by Prof. William K. Gregory of the American Museum of Natural History.

The panda, which lives in the most inaccessible parts of the Himalayas, is about as big as an American black bear, and is bear-like in appearance and general habits. It is marked like nothing else alive, with black legs, a black band around its body at the shoulders, black ears and a black spot around each eye; the rest of the creature is light-colored. (*See SNL*, Feb. 29, for picture.)

Prof. Gregory made an exhaustive comparison of the bones of panda specimens, detail for detail, with the bones of bears and of raccoons, as well as with fossil remains of bear- and raccoon-like animals now extinct. Despite differences in size, there were more fundamental shape-resemblances between the bones of panda and raccoon.

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MEDICINE

Heat, Cold and Scratch Allergies Added to List

SCRATCH allergy has been added to the list of conditions of hypersensitivity, Dr. Williams W. Duke of Kansas City reported to the American Medical Association meeting in that city.

Besides persons who are sensitive to pollen, such as hay fever sufferers, and those sensitive to foods, heat, cold and effort, reported at previous annual meetings of the American Medical Association, Dr. Duke has now discovered patients who are so sensitive to mechanical irritation that a slight scratch may cause them to develop any reaction from hives to shock and possibly sudden death.

Such individuals can be desensitized, Dr. Duke reported, by scratching themselves thoroughly each morning and evening with a stiff hair brush or bath brush. Similar treatment by small exposure to the causative agent, whether heat, light, cold or effort, will "cure" the hypersensitivity in the other patients.

Swimming Danger

Danger lurks at the bathing beach for those unfortunate persons who are hypersensitive to cold. Facts about this peculiar condition were shown by Dr. Bayard T. Horton of the Mayo Foundation for Education and Research, Rochester, Minn., in the scientific exhibit.

Nearly half of the persons studied collapsed after they had been in swimming, and some had to be rescued from the water. Besides the general reaction, which may cause collapse and unconsciousness, discoloration of the hands and feet and marked flushing of the face may occur. In one patient, the temperature of the cheek increased several degrees at the height of the reaction. Cold air as well as cold water brings on the condition in susceptible persons.

Experimental studies showed that the reaction is a chemical one. The effect of the cold is apparently to increase the amount of histamine in the blood. This substance, which occurs naturally in the body, produces similar disturbances of the circulation when injected into the blood stream.

Among the 20 patients suffering from this condition who came to Dr. Horton for treatment was a young farmer who had all his life been accustomed to going outdoors in the severe cold of Minnesota winters. Quite suddenly he developed the sensitiveness to cold which prevented his carrying out his usual farm duties.

A method of curing this allergic disease was reported by Dr. Horton. The cure for the condition is cold water. Immersing the hands in very cold water twice a day, Dr. Horton reported, cured the condition in all the cases he has been able to follow.

Hay Fever Map

Havens for hay fever sufferers who owe their affliction to ragweed pollen were reported by Oren C. Durham, North Chicago, Ill., botanist. For ten years Mr. Durham has ranged the country making a scientific study of the amount of ragweed pollen in the air at various localities. Assisting him were volunteer and regular observers of the U. S. Weather Bureau.

Mr. Durham rated about a hundred localities in North America by means of a pollen index method he devised. Ragweed hay fever sufferers, it appears from his report, may find sneeze-free refuge in the following places: Sacramento, Miami, Reno, Portland, Ore., Seattle, Spokane, Prince Albert, Sask., and Mexico City.

Blood Test

A new test for sensitiveness to certain foods was reported by Dr. Warren T. Vaughan of Richmond. Persons who cannot tolerate certain foods, such as shellfish, milk, eggs, or wheat, have in the past been tested by a skin scratch

method like that used to test hay fever patients. By this method physicians could determine which specific food or foods caused the often grave disturbance from which these hypersensitive or allergic patients suffered.

The new test Dr. Vaughan reported this morning is a blood test. A decrease in the number of white blood cells occurs in these patients after they have eaten the food to which they are sensitive, Dr. Vaughan found. Testing the blood of these patients after they have gone without food for 12 hours and then at three half-hour intervals after they have eaten the suspected food is the method used. The results agreed well with those obtained by skin tests and in some cases Dr. Vaughan found the blood test more sensitive than the skin test.

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CHEMISTRY

Italy To Use Surplus Wine For Motor Fuel

ITALY'S bumper "vino" crop last year is going to be used—at least the surplus—as a source of motor fuel. In its search for gasoline substitutes Italy is now looking over the large wine crop, says a report from Trade Commissioner E. Humes at Rome to the U. S. Commerce Department's Chemical Division.

From the surplus would be made alcohol which might be blended with gasoline as a motor fuel. A census of individual wine holdings is now being made, states Commissioner Hume's report, with a view to ascertaining the amount which will be available for conversion into alcohol for motor fuel.

With only 3 per cent. of its gasoline needs coming from domestic sources, Italy has used the last few years to develop intensively the manufacture of industrial alcohol for fuels. Early in 1936 a law was passed making a 20 per cent. blend of alcohol in gasoline compulsory, states the report.

Raw materials for distillers have been provided by increasing the acreage of sugar beets and a limitation has been placed on the amount of sugar beet molasses used for sugar recovery in order to increase the supply for alcohol producers.

Italy's production of absolute alcohol tells the story of the effectiveness of these and other measures. Production in 1934 was 11,000,000 gallons. In 1935 it was 13,200,00 gallons and the output is expected to reach 26,000,000 gallons of alcohol by 1938.

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BIOLOGY

Strange Hybrids Started By Male Nuclei in Female Egg

LIFE development starting with only the nucleus of the male cell introduced into a part of the egg from which the female nucleus had been taken away was reported before the meeting of the National Academy of Sciences, by Dr. Sven Hörstadius of the University of Stockholm.

Dr. Hörstadius worked with two different genera of sea urchins. With fine glass needles he cut the unfertilized eggs of one genus in two, leaving the nucleus of each egg in one of the halves. The half without a nucleus he fertilized with the sperm of the other kind of sea-urchin, thus producing a hybrid containing only paternal nucleus and only maternal cytoplasm, which is the general life-stuff or protoplasm of the cell. These strange hybrids lived to be three weeks old, as larval sea urchins. They might have lived longer; but at that point Dr. Hörstadius had to leave the laboratory where he was working and return home.

The problem on which the Swedish biologist was working was the old question whether the nucleus of the cell is completely the "boss" of the cellular life-activities, or whether the rest of the protoplasm (the cytoplasm) has any authority of its own.

In Dr. Hörstadius's hybrids, the character of the male parent was dominant, but not completely so. Some signs of the maternal characters asserted themselves also, indicating that the cytoplasm was not entirely passive in the presence of the nucleus.

However, the question was not considered closed by Dr. Hörstadius and his American colleagues who discussed the matter after his address. The cytoplasm, it was pointed out, may not possess its apparent "authority" in its own right. It may have been so deeply influenced by the female nucleus, before it was removed, that it continues to "carry out orders" even when left to itself. Also, there is the possibility that some small fragments of the nucleus may be left in the supposedly quite un-nucleated cells, for it is difficult to see a living nucleus with absolute distinctness, even under a strong microscope.

For these and other reasons, therefore, the Swedish scientist preferred to turn in a Scotch verdict, and leave the question open for further investigation.

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SILVACULTURE

Trees Now Showing Damage Due To Spring Floods

TREE damage due to floods of the early spring in New England is only now becoming fully manifest. In a recent issue of SCIENCE (May 1), Prof. Malcolm A. McKenzie of the Massachusetts Agricultural Experiment Station gives a condensed summary of his survey of the deadly effects of the flood, with suggestions for remedies.

One of the most devastating types of damage was due not to the water itself but to oil from flooded reservoirs floating on its surface. This coated the needles of evergreen trees, and has already killed many valuable ornamental specimens. Smaller evergreens, which were completely submerged when the oil came floating down, escaped. Oil damage to hardwood trees was also limited, due to the fact that they were leafless and dormant at the time of the floods.

More easily visible are the terrible bark wounds made by the battering of floating masses of ice. Many trees were entirely girdled by this ice erosion, and others can be saved only by prompt surgical work on the ragged edges of the wounds, with protection of the bare wood while the bark grows over it again. Other trees have had unsightly and harmful masses of debris lodged in their branches, and must be cleared and pruned if they are to be saved.

Trees that were entirely uprooted by the floods joined the ice floats and themselves became battering-rams in the grip of the charging waters.

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Many persons today have infected sinuses as a left-over from the world-wide influenza epidemic of 1918 and are carriers of disease, in the opinion of Dr. M. M. Cullom of Nashville, Tenn. Most of the population suffers from this disease at some time, Dr. Cullom said. A large proportion of those infected are left with a chronic infection that menaces life, health and hearing.

Sinus disease was given inglorious credit for being the source and carrier of the common cold by Dr. Edward C. Sewall of San Francisco who spoke at the same session. Dr. Sewall believes that cold weather has a bad effect on persons with chronic sinusitis, making them active carriers of colds to other persons. The person with sinus disease often has false colds which may be mistaken for true colds. True colds, however, never occur in succession, Dr. Sewall said. The false cold is brought about by chilling which affects the diseased membrane in sinusitis sufferers.

Oil Heals Ulcers

Cod liver oil, valuable remedy for and preventive of rickets in children, is proving its worth in the treatment of slow-healing ulcers. Excellent results in the treatment of such ulcers with a cod liver oil salve were reported by Drs. James R. Driver, George W. Binkley and Maurice Sullivan. They attributed the healing action of the salve to the vitamin A in the cod liver oil. The method was originated by Prof. Löhr working in Magdeburg, Germany.

Gastritis Rediscovered

Chronic gastritis or inflammation of the stomach, once a fashionable disease, has been rediscovered since the invention of the flexible gastroscope, the instrument by which physicians can examine the inside of the stomach. True gastritis was discovered by this instrument in about half of 2,500 patients suffering from abdominal complaints, Drs. Rudolf Schindler, Marie Ortmayer and John F. Renshaw of Chicago reported.

Drink Not Cirrhosis Cause

Alcohol cannot be regarded seriously as the cause of cirrhosis of the liver, in spite of the general opinion that it is, Drs. Russell S. Boles and Jefferson H. Clark of Philadelphia told the meeting. Their conclusion was reached from post-mortem examination of hundreds of patients. The liver condition and the person's drinking habits before death were compared. Cirrhosis was found more often among non-drinkers than drinkers, and of the drinkers, only about one-fourth had definite cirrhosis. In further support of their theory, these investigators pointed out that the type of cirrhosis usually thought to be alcoholic occurs in children and other non-alcoholics as well as in certain animals. Furthermore, among Brahmins, who drink very little, cirrhosis is relatively frequent.

Science News Letter, May 23, 1936

MUSEUM SCIENCE

Arctic Refrigerator Keeps Eskimo Relics Fresh

RAIDING the ice box has a different meaning in the Far North. Perpetually frozen soil of the Arctic makes a natural refrigerator in which archaeologists find Eskimo relics kept fresh for centuries.

Care with which Arctic relics of frozen wood, leather, or feathers should be de-frosted, was urged before the American Association of Museums by Douglas Leechman of the National Museum of Canada. Large objects partly dug out of frozen earth may thaw in the air and become soaking wet overnight, being ruined by splitting and warping before they are even brought to light.

The refrigerated objects greatly assist the archaeologist in forming a true picture of life among the early Eskimos, Mr. Leechman explained. Where the soil is not frozen, Eskimo rubbish heaps may preserve nothing but stone articles, even ivory being disintegrated.

Coins Reveal Their Age

Chemists have found a way to make ancient bronze coins of Athens and other famous cities reveal their age.

Results of precise chemical analysis, showing how the bronze used for coinage in various times and places differed in amount of tin, iron, and other substances present, were reported by Prof. Earle R. Caley of the Frick Chemical Laboratory at Princeton University. He told of finding that bronze coins from Macedon manufactured in the time of Alexander the Great contain considerable tin and very little lead. Greek bronze in general had less tin as time went on, and more lead.

Not only can chemistry provide some idea of the time of manufacture for previously undatable coins, Prof. Caley pointed out, but the age of objects found along with such coins will in future be better determined.

Detection of forgery of ancient bronze can be aided by chemistry, Prof. Caley showed. In authentic ancient bronze there are almost always weighable amounts of arsenic or sulphur, differing from bronze made under modern conditions of manufacture.

Workers Fingerprinted

To protect its fabulous treasures, New York's Metropolitan Museum of Art fingerprints all employees, and maintains armed guards day and night.

If a picture or other object should be stolen, fingerprints are of greatest assistance, Charles B. Burns of the museum staff declared. Fingerprints left on an art object in normal duties can be quickly identified by having all employees printed, and much time saved in trailing the guilty person.

The fingerprint system, required of all who apply for work, has enabled the museum to detect in advance unsuitable persons with police records.

The day and night armed squads of the Metropolitan engage in annual pistol shooting competitions, Mr. Burns said, and rivalry serves as an incentive to greater skill in handling firearms, which may be needed in emergency.

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The biggest engineering project yet found in Palestine's buried past is the water system constructed at Armageddon during the twelfth century B.C.

● RADIO

May 26, 2:15 p. m., E.S.T.

HOT WEATHER THINKING—Dr. John P. H. Murphy of St. Elizabeth's Hospital.

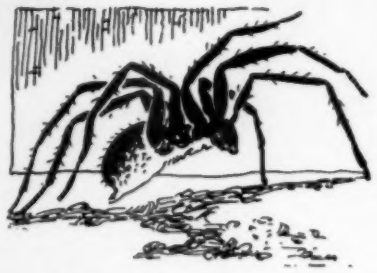
June 2, 2:15 p. m., E.S.T.

WHAT ABOUT TWINS?—Dr. Alan Guttmacher of Johns Hopkins Medical School.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

ENTOMOLOGY

NATURE RAMBLINGS by Frank Thone



When Is An Insect?

SPIDERS are commonly called "insects" in ordinary conversation and the popular prints, despite the inevitable pained protests of entomologists and of scientists generally. Spiders are not insects. They belong to a group of their own, called the arachnids. Insects, arachnids, and a number of other "creeping things" with jointed legs, in turn make up a larger zoological category known as the arthropods; just as mammals, birds, fish, etc., are grouped into the category of vertebrates. To call a spider an insect is no more correct than it would be to call a flying-fish a bird.

Probably the spider-insect confusion arises simply because insects have a lot of legs; therefore anything with a lot of legs is put down as an insect. But insects always have six legs, whereas spiders always have eight. Most of us, however, have difficulty telling the difference between six and eight, when the objects to be counted are small, and in rapid motion—sometimes toward your uneasy self.

Another difference, even more obvious, is in the matter of wings. A "typical" insect has four wings; a spider no wings at all. This difference, while well-marked in the great majority of insects, is impossible to see in many others. Some insects have lost a pair of wings in the course of evolution, some have lost both pairs, and many that retain wings keep them out of use so persistently that one is apt to forget their existence.

Again, insects have antennae or "feelers," which spiders never have. Insect eyes are often large and conspicuous, while spider eyes are small, and usually eight in number—not a characteristic eye count for insects.

There are other points of difference, such as the division of the insect body into three sections—head, thorax and abdomen—while the spider has only two. But the few points of distinction given will suffice, if you will only look closely enough.

One thing that deters many people from studying these interesting lesser neighbors more intimately is the fear we all have of the unknown. Anything that crawls is supposed to bite, and any bite is supposed to be deadly. As a matter of fact, very few spiders can bite through the human hide, and of these only one, the Black Widow, is really "bad poison." And the worst you are likely to get out of an unfriendly insect is a hornet-sting, which, though painful, is certainly not likely to be lethal. We really should "take a chance" more often, and get acquainted with our neighbors of the little world.

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SURGERY

Test Can Foretell Success Of Blood Pressure Operation

A TEST which enables the surgeon to predict the outcome of operations for relief of high blood pressure before he starts the operation was reported by Dr. Edgar V. Allen of the Mayo Clinic, Rochester, Minn., at the meeting of the American Heart Association in Kansas City. Dr. Allen developed the test in collaboration with Drs. J. S. Lundy and A. W. Adson.

The test is used to determine which patients will be helped by this modern method of relieving very high blood pressure. Patients who will not be helped as shown by the test are thus spared what would be, in their cases, a useless operation.

The test consists in injecting into a vein an anesthetic, sodium pentothal, which puts the patient to sleep. This anesthetic, which is related to amytal, causes the patient's blood vessels to dilate temporarily, thus lowering the blood pressure. The operation produces the same effect but it is a permanent one. If the anesthetic does not cause the drop in blood pressure, the surgeon knows the operation would not be successful either.

The patient is under the anesthetic for about 15 minutes in the simple test and is able to be up and around within an hour. The operation itself consists in cutting a set of involuntary nerves which control dilation and contraction of blood vessels within the abdomen. A similar operation has been devised for Raynaud's disease, the condition in which impaired circulation in the extremities causes the fingers and toes to turn white, blue, or red on exposure to cold or when the patient gets excited.

An improved technic for performing this operation was reported by Dr. James C. White of Boston, and consists of cutting those involuntary nerves which control the size of the blood vessels of the extremities. As first devised, the operation cured the condition as far as the toes were concerned, but Dr. White noticed that a few months after operation the hands continued to turn color when the patient became excited. In his opinion, this is because the nerves were not cut in the right place, so he devised a new operation for relieving the condition in the hands which apparently gives the same results as the original operation does for the feet.

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ENGINEERING

Mine Owner Embarrassed: Elephant Dropped In

MINING in the jungle has its peculiar, often rather heavy, embarrassments. There is, for example, the case of a British mining engineer friend of Dr. Frank D. Adams, emeritus professor of geology at McGill University.

This engineer runs a tin mine in Malaya, just below the Siamese boundary. His miners, Chinese workmen, have been considerably bothered, because an uncommonly huge crocodile swam up the creek to their settlement, and at the same time a leopard has been snarling and stealing livestock from the land side.

Then one night an elephant wandered into camp and fell down the mine shaft. The fall killed him, of course. Only, the engineer wrote to Dr. Adams, he didn't quite know what to do about it. He had no machinery strong enough to hoist the dead elephant out again. And one doesn't want an elephant cluttering up the bottom of one's mine shaft, you know. It just won't do.

Science News Letter, May 23, 1936

•First Glances at New Books

Submarine Photography

TWENTY YEARS UNDER THE SEA—J. E. Williamson—*Hale, Cushman* and *Flint,* 320 p., $2.50. A man who has knocked around all over the earth, and beneath the waters that are under the earth, tells vividly and entertainingly of his adventures in the taking of submarine motion pictures. The "stills" used as illustrations give an idea of the beauty of the films he took, but only one who has seen them can appreciate the magnificent action with which they are crowded.

Science News Letter, May 23, 1936

Medicine

APPROACHING MOTHERHOOD—George L. Brodhead—*Hoeber,* 196 p., $1.50. Fourth revised edition of a book by the director of obstetrics, Knickerbocker Hospital. Questions and answers conveniently arranged.

Science News Letter, May 23, 1936

Juvenile

HEALTH STORIES, Book Three—Anna B. Towse, Florence E. Mathews, and William S. Gray—*Scott, Foresman,* 206 p., illus., 76c. For third-grade children.

Science News Letter, May 23, 1936

Medicine

THE INTEGRATION OF THE ENDOCRINE SYSTEM—Sir Walter Langdon-Brown—*Cambridge (Macmillan),* 54 p., 75c. The Fifth Horsley Memorial Lecture, delivered at University College Hospital Medical School.

Science News Letter, May 23, 1936

Medicine

THE AIMS AND METHODS OF MEDICAL SCIENCE—John A. Ryle—*Cambridge (Macmillan),* 44 p., 75c. An inaugural lecture by the Regius Professor of Physics in the University of Cambridge, consulting physician to Guy's Hospital, London.

Science News Letter, May 23, 1936

Education

EXPERIMENTAL PEDAGOGY—W. A. Lay; trans. by Adolf Weil and E. K. Schwartz—*Prentice-Hall,* 371 p., $2.25. An English translation of this work of a well-known German educator.

Science News Letter, May 23, 1936

Education

PLAIN TALK—John W. Studebaker *National Home Library,* 166 p., 25c. Frank discussion of education and democracy by the U.S. Commissioner of Education who as superintendent of Des Moines schools established the Des Moines public forum idea. Proposing to "save democracy through education" he pleads for the extension of the idea of public forums. There is a useful analysis of the steps by which freedom today has been won.

Science News Letter, May 23, 1936

Mathematics

ARITHMETIC FOR BUSINESS TRAINING—Alexander Fichandler, Louis Slatkin and Murray Melzak—*Globe Book Co.,* 163 p., $1. A textbook for junior high school which should be extremely useful.

Science News Letter, May 23, 1936

Aeronautics

FLYING FOR 1936—*Aeronautical Chamber of Commerce of America, Inc.,* 254 p., $1.50. The official Junior Aircraft Year Book, third annual edition.

Science News Letter, May 23, 1936

Psychology

BUILDING CHARACTER AND PERSONALITY—William A. Wheatley and Royce R. Mallory—*Ginn,* 362 p., $1.20. A textbook in "orientation and guidance" for use in secondary schools.

Science News Letter, May 23, 1936

Geography

LATIN AMERICA—Stephen Duggan—*World Peace Foundation,* 65 p., cloth, 75c., paper, 35c. A discussion of Pan American culture.

Science News Letter, May 23, 1936

Electrical Engineering

FUN WITH ELECTRICITY—A. Frederick Collins—*Appleton-Century,* 238 p., $2. A new book for boys, simply written and clearly illustrated.

Science News Letter, May 23, 1936

Physics

THERMODYNAMICS FOR ENGINEERS; Second Ed.—Sir J. A. Ewing—*Cambridge (Macmillan),* 389 p., $6. Written primarily for engineers, but useful also to students of physics and others who wish to acquire a working knowledge of the subject.

Science News Letter, May 23, 1936

Nursing

A GUIDE TO PSYCHIATRIC NURSING (2d Ed., Revised)—F. A. Carmichael and John Chapman—*Lea & Febiger,* 175 p., $2.25.

Science News Letter, May 23, 1936

Medicine

YOUR HAY FEVER—Oren C. Durham—*Bobbs-Merrill,* 264 p., $2. Hay fever is a perennial joke to forty-nine persons out of fifty; to the remaining 2 per cent of our citizenry, who are the susceptibles, it is a foretaste of Purgatory—if not of the next floor below. But in any case, hay fever is an attention-commanding and, even to the lucky immunes, an interesting subject. This book, which treats both of the disease and of the plants whose pollens cause it, in manner at once informative and highly readable, is therefore sure to command a wide audience.

Science News Letter, May 23, 1936

Psychology

KNOW THYSELF: A STUDY IN MENTAL QUALITIES—John Potts—*Dorrance,* 267 p., $3. Written by a physician in the style of "axioms" followed by comments. Some of the axioms—all dealing with "Persons having superior mentality"—will probably meet with objection from psychologists because of the author's apparent tendency to over-optimism concerning the virtues of the intellectual.

Science News Letter, May 23, 1936

Psychic Research

FORTY YEARS OF PSYCHIC RESEARCH—Hamlin Garland—*Macmillan,* 394 p., $3. Reminiscences of a lifetime of study of psychic phenomena which has left the author convinced of the genuineness of the phenomena but still in doubt as to the spiritist interpretation of them.

Science News Letter, May 23, 1936

Physics

HYDROSTATICS—A. S. Ramsey—*Cambridge (Macmillan),* 169 p., $2.35. A British textbook by the president of Magdalene College, Cambridge, "for the use of first year students at the Universities and for the higher divisions in Schools."

Science News Letter, May 23, 1936

Psychic Research

TOWARDS A METHOD OF EVALUATING MEDIUMISTIC MATERIAL—J. G. Pratt—*Boston Soc. for Psychic Research,* 64 p., 75c.

Science News Letter, May 23, 1936

Physics

THE IDENTITY THEORY—Blamey Stevens—*Sherratt & Hughes, Manchester, England,* 247 p., 7s.6d.

In this book the author describes and professes to prove a theory which is a substitute for relativity. It is based on the postulate that inertia, time, and space are identical, instead of the relativity postulation of space and time as being dimensions of a four-dimensional continuum.

Science News Letter, May 23, 1936

Psychology

PSYCHOLOGY OF SEX—Havelock Ellis—*Emerson Books,* 377 p., $3. Those familiar with this author's well-known seven-volume work on "Studies in the Psychology of Sex" will welcome this new concise book which serves as an introduction to the subject. Not alone the psychological, but also the biological and medical aspects of marriage, love, and the sexual impulse are discussed, and new light is given on more or less universal problems.

Science News Letter, May 23, 1936

Mathematics

PROGRESSIVE SOLID GEOMETRY—W. W. Hart—*Heath,* 596 p., $1.36. A new high school text by an associate professor of mathematics at the University of Wisconsin.

Science News Letter, May 23, 1936

Social Insurance

SOCIAL SECURITY—Edward H. Ochsner—*Social Security Press,* 231 p., 50c. The author, who is consulting surgeon at Augustana Hospital in Chicago, presents the negative side of the question of free medical care.

Science News Letter, May 23, 1936

Medicine-Psychology

YOURS FOR HEALTH AND HAPPINESS—Donald B. Thorburn—*Kennedy Publ. Co.,* 133 p., $1. Written in conversational style and enlivened by amusing cartoons.

Science News Letter, May 23, 1936

Social Science

LEISURE AND RECREATION—M. H. and E. S. Neumeyer—*Barnes,* 405 p., $3. A study of leisure and recreation in their sociological aspects.

Science News Letter, May 23, 1936

Health

HEALTH STORIES; BOOK ONE—Anna B. Towse and William S. Gray—*Reilly & Lee,* 144 p., $1. Printed in big type for small children, with gay colored illustrations.

Science News Letter, May 23, 1936

Biology

FOUNDATIONS OF BIOLOGY—L. L. Woodruff—*Macmillan,* 583 p., $3.50. Fifth edition of a successful college text.

Science News Letter, May 23, 1936

Engineering-Conservation

REPORT TO CONGRESS ON THE UNIFIED DEVELOPMENT OF THE TENNESSEE RIVER SYSTEM—*Tennessee Valley Authority, Knoxville,* 105 p., 6 tables, 12 maps, 25c. TVA has been so much dramatized as combat between public authorities and the "power interests" that there has been a tendency to lose sight of everything but the power dams. However, there is a lot to TVA besides dams, as this brochure shows: soil conservation, reforestation, flood control, navigation, community planning—all harmonized into a comprehensive unity. This publication should be required reading in general courses of both the natural and the social sciences.

Science News Letter, May 23, 1936

Health Education

BIBLIOGRAPHY IN HEALTH EDUCATION FOR SCHOOLS AND COLLEGES—Selected and annotated by Mary Ella Chayer—*Putnam,* 100 p., $1.50.

Science News Letter, May 23, 1936

Medicine

ULTRA SHORT WAVE THERAPY—William H. Dieffenbach—*Westermann,* 87 p., $3. By the consulting radiologist to Community Hospital in New York.

Science News Letter, May 23, 1936

General Science

SCIENCE STORIES; BOOK TWO—W. L. Beauchamp, Harriet M. Fogg, Gertrude Crampton and W. S. Gray—*Reilly & Lee,* 176 p., colored illustrations, $1. Written for children from six to ten.

Science News Letter, May 23, 1936

Chemistry

A LABORATORY COURSE IN ELEMENTARY CHEMISTRY—E. B. R. Prideaux and F. C. Laxton—*William Heinemann, Ltd., London; American agents, Chemical Pub. Co. of N. Y.,* 258 p., $2.

Science News Letter, May 23, 1936

Chemistry

L'ACTION CHIMIQUE DES RAYONS ALPHA EN PHASE GAZEUSE—W. Mund—*Hermann & Cie., Paris,* 51 p., 15fr.

Science News Letter, May 23, 1936

Chemistry

RECHERCHES ANALYTIQUES SUR L'ARGININE ET L'HISTIDINE—Jacques Bussit—*Hermann & Cie., Paris,* 100 p., 20fr.

Science News Letter, May 23, 1936

Chemistry

THIXOTROPY—H. Freundlich—*Hermann & Cie., Paris,* 50 p., 12fr.

Science News Letter, May 23, 1936

Metrology

MEASURES GEOMETRIQUES. Pt. 2—Pierre Fleury—*Hermann & Cie., Paris,* 108 p., 93 figures, 20fr.

Science News Letter, May 23, 1936

Physics

LA DIFFRACTION DES ELECTRONS DANS SES APPLICATIONS—Jean J. Trillat—*Hermann & Cie., Paris,* 56 p., 18fr.

Science News Letter, May 23, 1936

Photoelectricity

NEW THEORIES OF THE PHOTOELECTRIC EFFECT—Lee A. Dubridge—*Hermann & Cie., Paris,* 56 p., 12fr.

Science News Letter, May 23, 1936

Medicine

THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS, A HANDBOOK FOR PRACTITIONERS, A TEXTBOOK FOR STUDENTS, NURSES AND SOCIAL WORKERS—John B. Hawes and Moses J. Stone—*Lea & Febiger,* 215 p., $2.75.

Science News Letter, May 23, 1936

Highway Research

HIGHWAY RESEARCH BOARD. Proceedings, Fifteenth Annual Meeting, 1935—Ed. by Roy W. Crum—*National Research Coun.,* 394 p., $2.

Science News Letter, May 23, 1936

General Science

TEACHERS MANUAL FOR SCIENCE IN THE WORLD OF WORK, Volumes I and II—Frank R. Deming and Joseph T. Nerden—*McGraw-Hill,* 47 p., 25c.

Science News Letter, May 23, 1936

Statistics

MORTALITY STATISTICS, 1933—U. S. Bureau of the Census—*Govt. Print. Off.,* 519 p., $2.25.

Science News Letter, May 23, 1936

Hygiene

SEX HYGIENE FOR BOYS—H. L. Shibler—*School and College Service,* 63 p., 20c.

Science News Letter, May 23, 1936

Hygiene

SEX HYGIENE FOR GIRLS—Genevieve Griffith—*School and College Service,* 62 p., 20c.

Science News Letter, May 23, 1936

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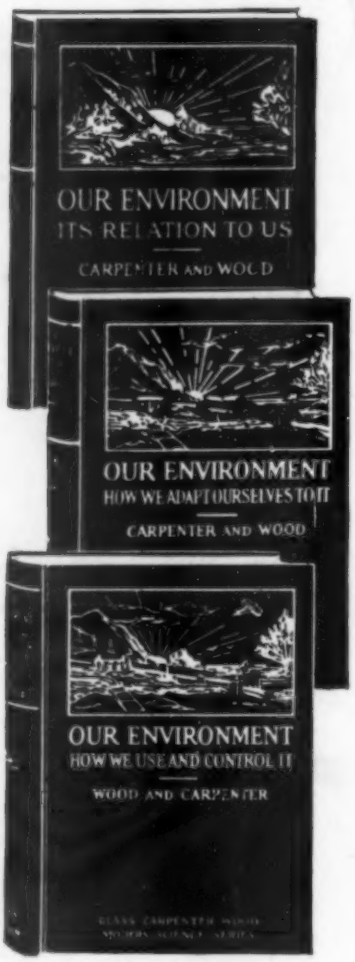
THE TREND IN SCIENCE

Without a knowledge of Science, one cannot understand current events.—J. B. S. HALDANE

A GREAT increase in the teaching of General Science in the seventh, eighth, and ninth grades is to be noted throughout the entire country. More elementary schools have this year introduced the subject in the seventh and eighth grades than in any preceding year. In the ninth grade the change in university requirements has given great impetus to the subject of General Science. General Science is today more popular in the seventh, eighth, and ninth grades than ever before.



It is not strange that state and national authorities strongly recommend the teaching of organized science in the seventh, eighth, and ninth grades. The Thirty-first Yearbook of the National Society for the Study of Education recommends that opportunities for education in Science be given to all pupils in the seventh, eighth, and ninth grades whether these pupils are in a school system organized on the 6-6-3 plan or on the 8-4 plan or upon any other administrative grouping of grades. Many states have already written standard courses in Science for the seventh, eighth, and ninth grades.

Nor is the subject popular alone with teachers. Pupils of these grades show more real enthusiasm for organized science than for any other subject. Patrons also are delighted with the emphasis that is being given this important subject.

The reason for this is not far to seek. This is a scientific age. There is an insistent popular demand for simple instruction in Science. Newspapers, magazines, and a continuous flow of trade books cater to this demand. Schools simply fulfill the needs and wishes of the community in introducing the study of organized science to young pupils.

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